

# **DoD Modeling and Simulation Policy Update**



## **The Defense Modeling and Simulation Office**

*Lead, Integrate, and Leverage  
M&S for the Warfighter*

# Overview

- DUSD (S&T) Perspective
- The DMSO Vision and Role
- What's Next?

*Real Progress Will Be Determined By Demonstrated Benefits  
... Not By Policy, Directives and Rhetoric*



# M&S: DUSD (S&T) Perspective

- M&S popularity continues to grow and the appetite for M&S tools is becoming larger
- Advanced technologies (government & commercial) show promise for significant increases in M&S capabilities
  - Processing Power, Comm Networks, Algorithms, Models, Human Immersion Technologies
- Many barriers still exist, e.g.,
  - Modeling and Simulation
    - Human behavior representation
    - Integrated natural environment
    - Scalable, high-fidelity systems
    - 4-D presentations
  - Supporting technologies
    - Software Intensive Systems
    - Processing power and bandwidth



*Capability Exceeds Demand and  
Demand Exceeds What's Delivered*



# M&S: DUSD (S&T) Perspective

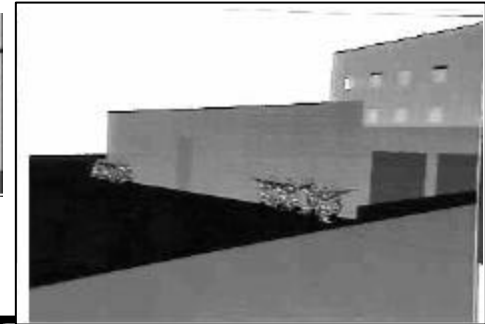
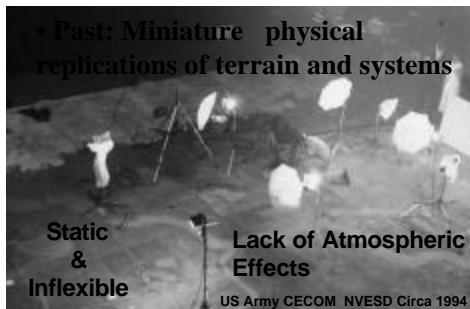


- Past: Resource intensive training



- Past: Photos, Map tables, walls,

- Past: Miniature physical replications of terrain and systems



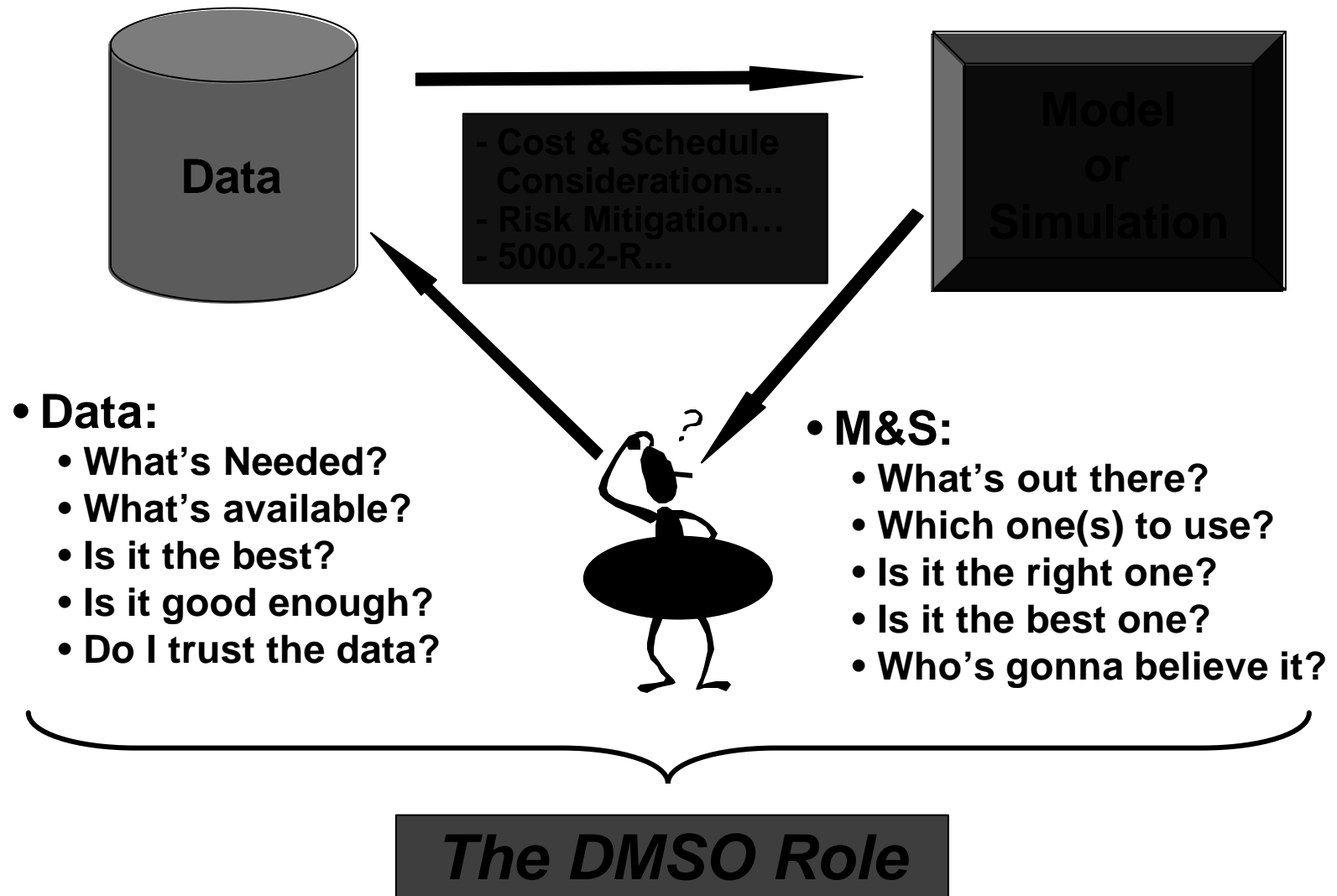
Training

Analysis

Acquisition

Experimentation

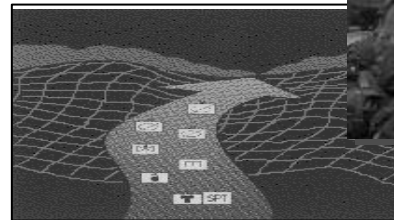
# The M&S User's Dilemma



# The DMSO Vision and Role

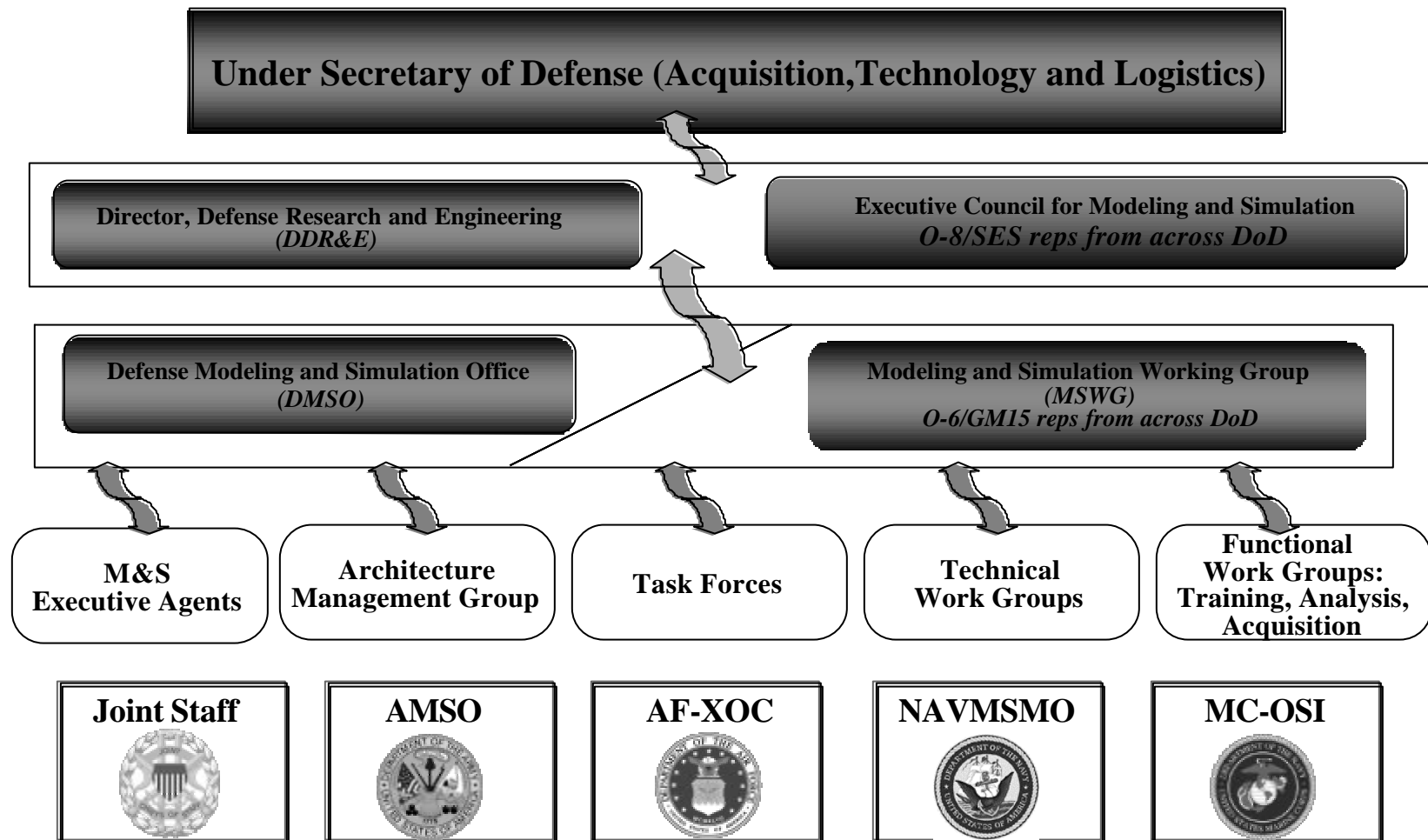
## Vision

“Lead and Integrate the DoD M&S community, and Leverage M&S science and technology advances to ensure that the Warfighters of today and tomorrow have superior and affordable M&S tools, products and capabilities to support their missions and to give them revolutionary war-winning capabilities.”



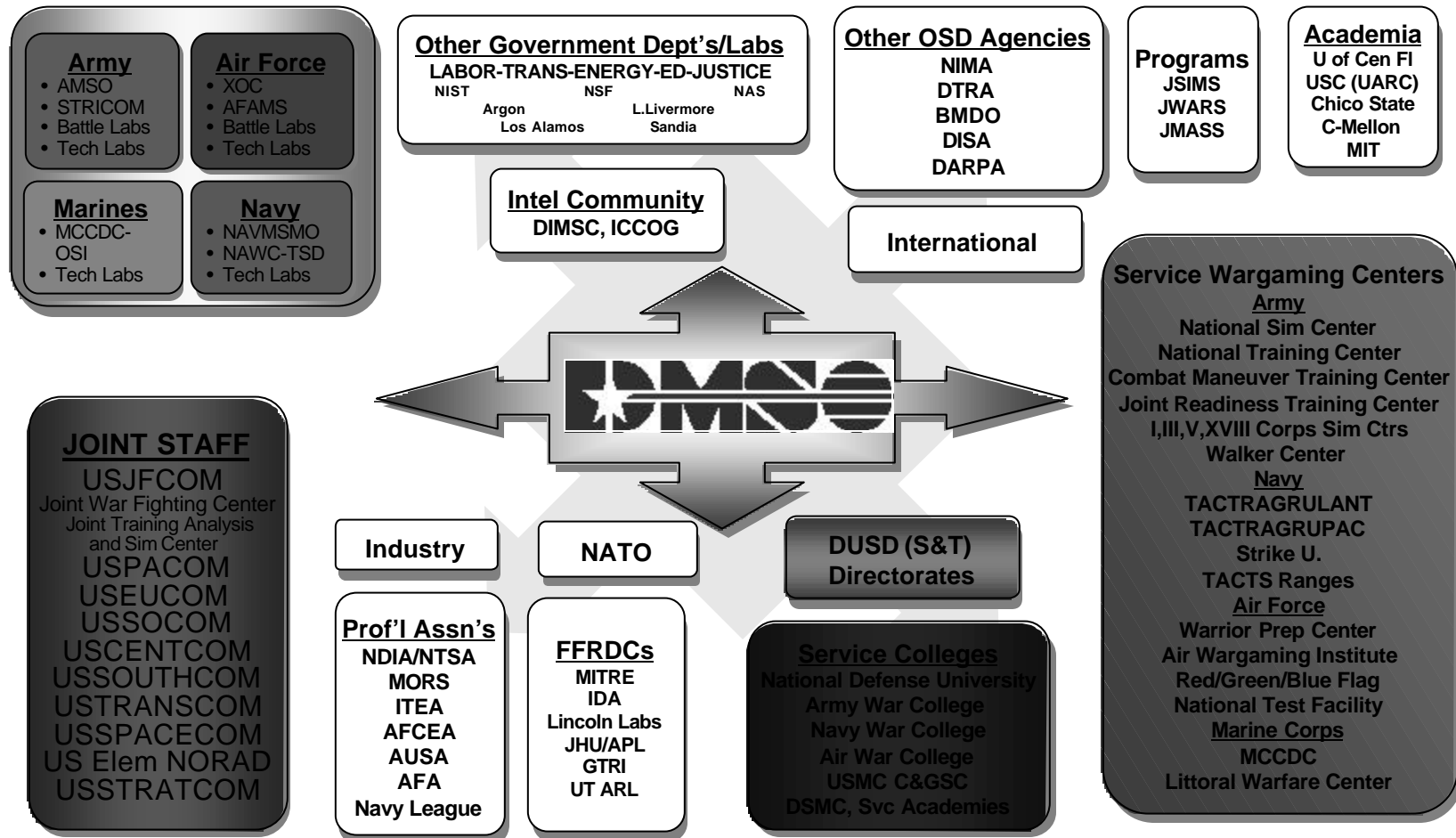
# The DMSO Vision and Role

## Organizational Structure

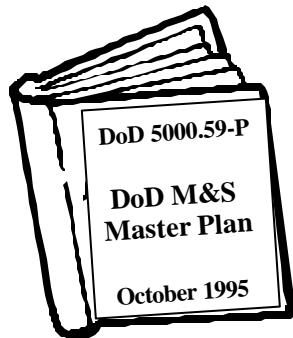


# The DMSO Vision and Role

## The M&S Community







## M&S Needs & Requirements

W  
A  
R  
F  
I  
G  
H  
T  
E  
R

# The DMSO Vision and Role Implementing the Vision

- High Level Architecture
- Integrated Natural Environment
- Functional Description of the Mission Space
- Data Standards

- VV&A

Warfighter Reqts

0 - 3 years

Enterprise Efforts

3-5 years

S&T Initiatives

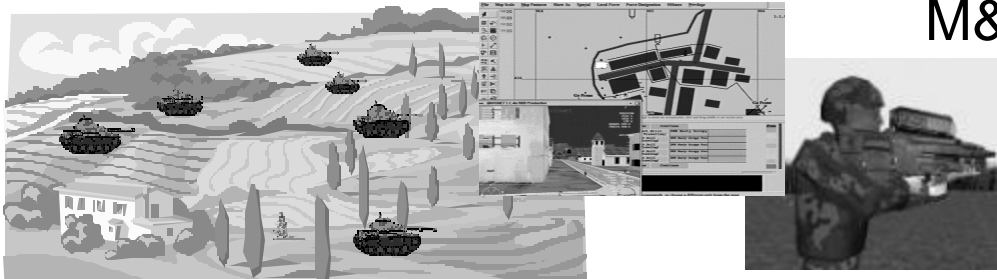
5 + years

- OOTW  
- BAA

- Human Behavior Representation
- M&S Resource Repository
- M&S information Analysis Center
- Education

## Concepts Application

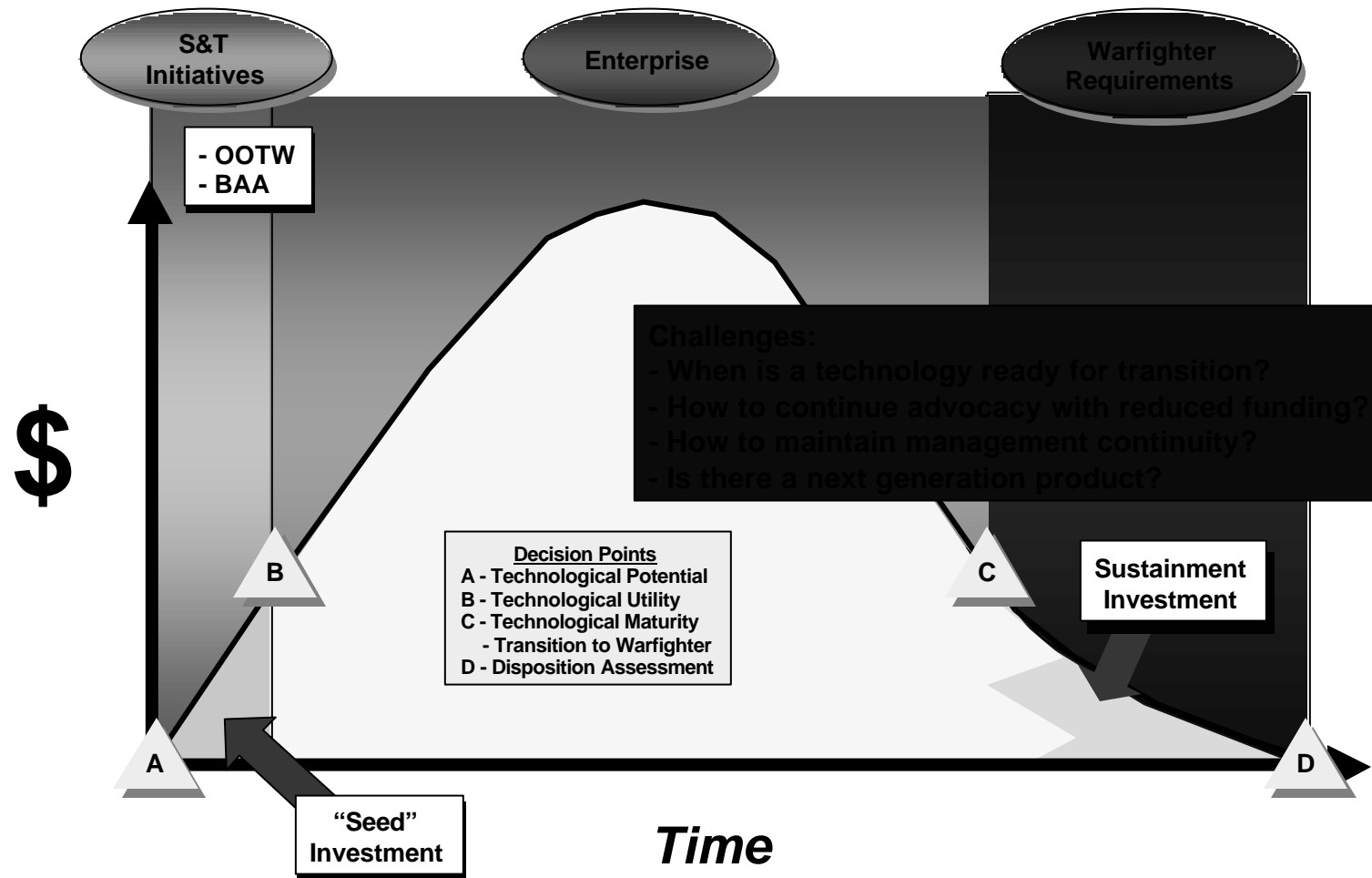
M&S Tools, Products  
& Capabilities



Science and Technology "Industrial Base"

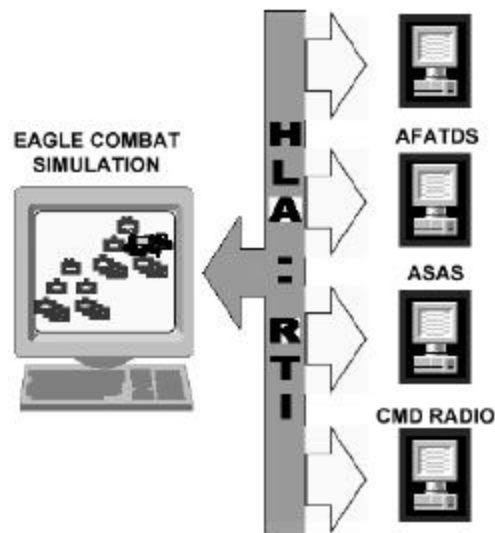


# The DMSO Vision and Role Implementing the Vision



# The DMSO Vision and Role

## Transition Example -- HLA



- High Level Architecture is designed to support interfaces between simulations and live systems
- Military staff operate their real world command and control systems
- Interact with 'synthetic' subordinate units who fight the war in simulation
- Operational systems and simulations representing warfighters are all federates in an HLA federation



**Transition issues:**

- Supporting software
- IEEE 1516 Standard
- Training and education
- MOA with Services

# The DMSO Vision and Role

## Transition Example -- HLA MOA

*“... This agreement attests to the fact that the HLA has gained the Department’s simulation stakeholders’ acceptance and strong support through tried and proven technical performance, capability, maturity and potential. Furthermore, the wide spread adoption of HLA is contributing not only to the military capability and readiness of US forces but also to a growing number of allied and friendly nations as well, laying a firm foundation for international interoperability...”*

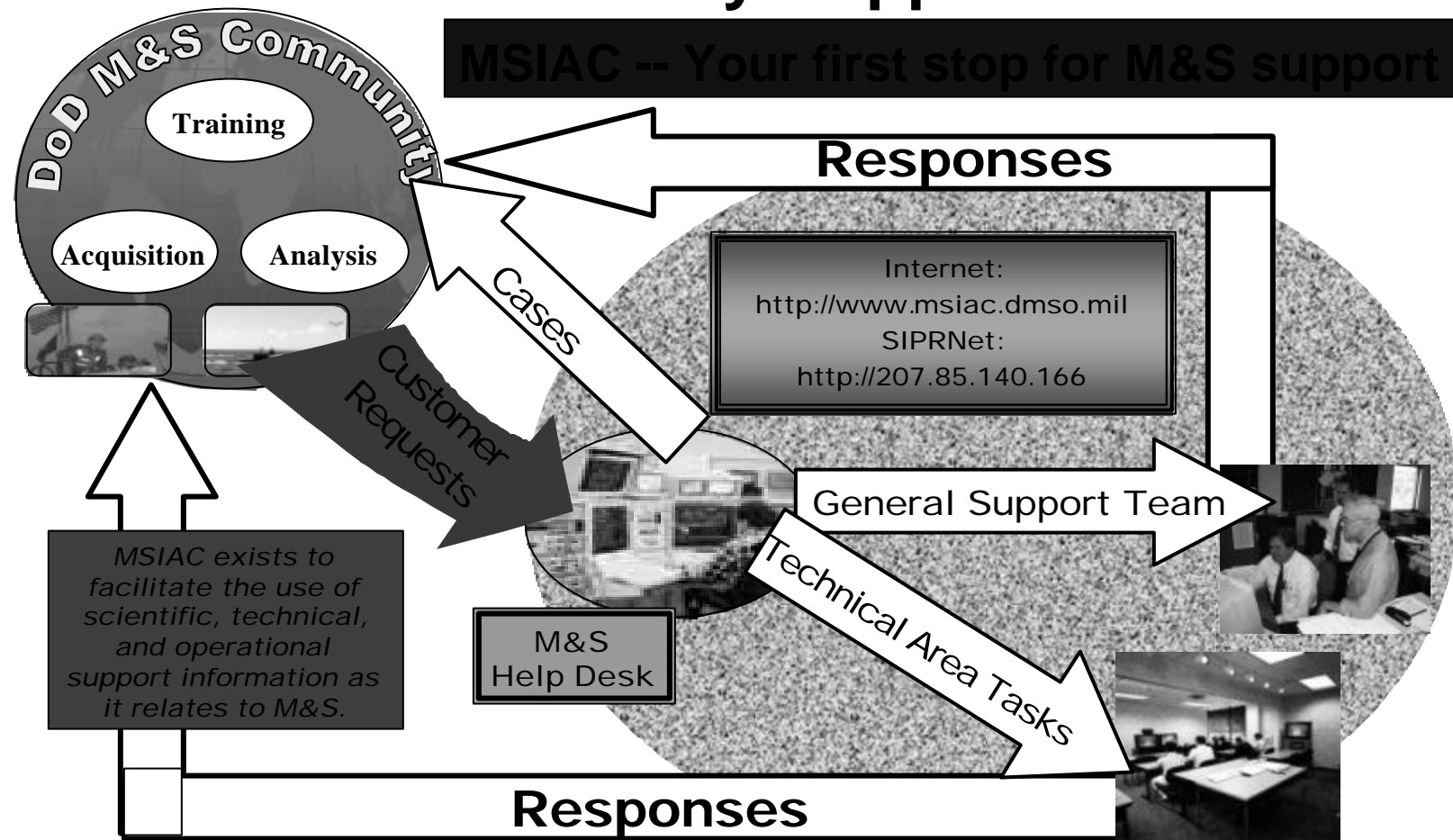
*J. S. Gansler, USD (AT&L)  
03 November 2000*

### Within the MOA:

- “...Establishes the HLA as the technical architecture for interoperability and reuse among the signatories...”
- “... any other alternative must be justified...”
- “...DoD components shall establish their own policies and procedures for transitioning their simulations to HLA or excluding them based on requirements, resources, Component priorities, or security. All exclusions from HLA shall be documented, justified by the DoD Component...”



# The DMSO Vision and Role Community Support



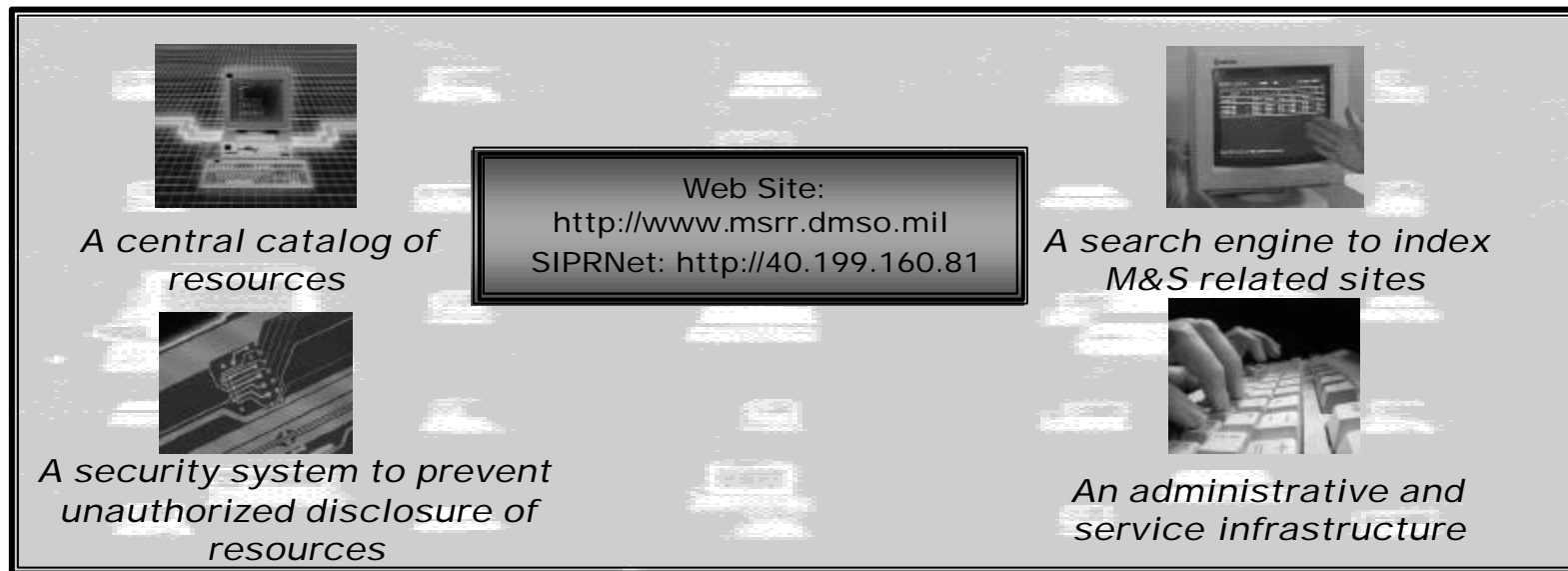
A clearing house for the DoD community that facilitates access to M&S assets and information via a web-based and help desk system.



# The DMSO Vision and Role Community Support

## Modeling and Simulation Resource Repository

- *A cooperative effort across the Department of Defense M&S community to enable sharing of resources*
- *A distributed network of servers, on both the Internet (unclassified) and SIPRNet (classified), sponsored by DMSO, with central access sustained by the MSIAC*



A collection of models, simulations, object models, algorithms, data sets, documents, tools, and utilities.



# What's Next

- **Acquisition M&S needs identification**
  - Training, Analysis & Experimentation are well established
  - Warfighter Needs Database initial prototype
- **M&S support and resources availability/awareness**
  - VV&A (5000.61 & RPG)
  - M&S Information Analysis Center (MSIAC)
  - M&S Resource Repository (MSRR)
- **Education / Increased awareness of M&S strengths and limitations**
- **DoD M&S Charter and Master Plan Revision**
  - Clarify roles and functions of DoD M&S organizations
  - Identify and coordinate M&S priorities and funding

*Real Progress Will Be Determined By Demonstrated Benefit  
... Not By Policy, Directives and Rhetoric*



# What's Next for DMSO

- HLA in transitioning to commercial support
- VV&A policy documents nearing signature
- Warfighter Requirements Database being populated
- Increased focus on Human Behavior Modeling
- New emphasis on OOTW
- Expanded Integrated Natural Environment and other data standardization programs
- S&T Program: Leverage M&S projects for broadest DoD benefit
- Identify basic research topics in M&S
- Inter-Agency cooperation
- Integration Task Force developing consensus for DoD M&S Master Plan update

*Stay Engaged*





# **M&S is Critical to the Emerging Concepts in DoD's Future**

- **Skip-Gen**
- **Simulation enhanced acquisition**
- **M&S embedded in C4I systems**
- **Weapon system embedded training capability**
- **Analytical simulations feeding staff training / mission rehearsal simulations**



# Summary

- **M&S is a Tool:**
  - *A Means to an End rather than an End*
- **M&S spans the complete spectrum of Warfighter activities:**
  - *Performance, Decisions, Designs & Concepts ... for the Warfighter!*
- **We have yet to maximize M&S acquisition support utility:**
  - *“C-minus” at best: It’s a shared responsibility*
- **There is more to come:**
  - *Capability exceeds demand*
  - *Demand exceeds what’s delivered*
- **M&S Situational Awareness is Key:**
  - *It’s a natural fit ... Find opportunities and exploit them*
- **“Where is the beef”:**
  - *Real progress will be determined by demonstrated benefit  
... Not by Policy, Directives, or Rhetoric*

